Amendments to the claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1 (currently amended). In a receiver of a communication system, a method for reducing noise in a transformed signal, said transformed signal having a plurality of signal components on different subcarriers which are orthogonal to each other, said method comprising the steps of:

receiving ~~a~~ the transformed signal by a detector of said communication system;

processing the plurality of signal components of said transformed signal, wherein said processing step comprises:

identifying one or more signal components having one or more smallest channel coefficients based upon a channel estimate of said plurality of signal components; ~~and~~

reconstructing a predetermined number of times, by a reconstructing module, said one or more signal components of said plurality of signal components, said reconstructing being based upon said processing step to thereby reduce noise in said transformed signal; and

replacing said one or more signal components with the reconstructed one or more signal components to provide a reconstructed transformed signal having one or more reconstructed signal components ~~wherein said processing step further comprises the steps: identifying said one or more signal components based upon a channel estimate of said plurality of signal components; and further wherein said reconstructing step further comprises the step of providing a reconstructed transformed signal of said transformed signal~~.

Claim 2 (original). The method as claimed in claim 1, wherein said processing step comprises the step of providing an estimated signal from said transformed signal at output of said detector and based upon said channel estimate.

Claim 3 (original). The method as claimed in claim 2, wherein said processing step further comprises the step of decision processing said estimated

signal using a plurality of decision modules.

Claim 4 (original). The method as claimed in claim 3, wherein said decision processing step comprises the step of soft decision processing.

Claim 5 (original). The method as claimed in claim 3, wherein said decision processing step comprises the step of hard decision processing.

Claim 6 (original). The method as claimed in claim 1, wherein said reconstructing step further comprises the step of providing another estimated signal from said reconstructed transformed signal at said output of said detector and based upon said channel estimate.

Claim 7 (original). The method as claimed in claim 6, wherein said processing step further comprises the step of decision processing said another estimated signal using said plurality of decision modules.

Claim 8 (original). The method as claimed in claim 7, wherein said decision processing of said another estimated signal comprises the step of soft decision

processing.

Claim 9 (original). The method as claimed in claim 7, wherein said decision processing of said another estimated signal comprises the step of hard decision processing.

Claim 10 (original). The method as claimed in claim 7, wherein said reconstructing step further comprises the step of determining whether said one or more signal components has been reconstructed said predetermined number of times

Claim 11 (original). The method as claimed in claim 10, wherein said reconstructing step further comprises the step of determining whether to process another one or more signal components of said plurality of signal components.

Claim 12 (original). The method as claimed in claim 11, and further comprising the step of providing current estimated signal for subsequent processing when determined that iteration of said another signal component is

not required.

Claim 13 (original). The method as claimed in claim 11, wherein said reconstructing step further comprises the step of simultaneously reconstructing two or more of said another one or more signal components.

Claim 14 (original). The method as claimed in claim 11, wherein said reconstructing step further comprises the step of reconstructing, one at a time, each of said another one or more signal components.

Claim 15 (original). The method as claimed in claim 1, wherein said reconstructing step further comprises the step of simultaneously reconstructing two or more of said one or more signal components.

Claim 16 (original). The method as claimed in claim 1, wherein said reconstructing step further comprises the step of reconstructing, one at a time, each of said one or more signal components.

Claim 17 (currently amended). A receiver for reducing noise in a transformed

signal, said transformed signal having a plurality of signal components on different subcarriers which are orthogonal to each other, said receiver comprising:

a signal reconstructing section having:

a detector for detecting said transformed signal;

one or more decision modules, each of said one or more decision modules having an input coupled to output of said detector; and

a reconstructing module having one or more inputs, said one or more inputs being respectively coupled to output of said one or more decision modules,

wherein said reconstructing module is adapted to identify one or more signal components having one or more smallest channel coefficients based upon a channel estimate of said plurality of signal components;

wherein said ~~reconstructing module is adapted to reconstruct~~ one or more signal components of said plurality of signal components are reconstructed a predetermined number of times to provide a reconstructed transformed signal having one or more transformed signal components; and

the one or more signal components are replaced with the reconstructed one or more transformed signal components to thereby form a noise-reduced transformed signal~~; and wherein said reconstructing module is adapted to provide a reconstructed transformed signal of said transformed signal; further wherein said reconstructing module is adapted to identify said one or more signal components based upon a channel estimate of said plurality of signal components~~.

Claim 18 (original). The receiver as claimed in claim 17, wherein said one or more decision modules comprises one or more hard decision modules.

Claim 19 (original). The receiver as claimed in claim 17, wherein said one or more decision modules further comprises one or more soft decision modules.

Claim 20 (original). The receiver as claimed in claim 17, wherein said reconstructing module is adapted to perform reconstruction based on a relationship between a received signal component and a transmitted signal.

Claim 21 (original). The receiver as claimed in claim 17, wherein said

reconstructing module is adapted to perform simultaneous reconstruction of two or more of said one or more signal components.

Claim 22 (original). The receiver as claimed in claim 17, wherein said reconstructing module is adapted to perform reconstruction of said one or more signal components signal components one at a time.

Claim 23 (currently amended). A communication system comprising:

a signal reconstructing section for reducing noise in a transformed signal, said transformed signal having a plurality of signal components on different subcarriers which are orthogonal to each other, said signal reconstructing section having:

a detector for detecting said transformed signal;

one or more decision modules, each of said one or more decision modules having an input coupled to output of said detector; and

a reconstructing module having one or more inputs, said one or more inputs being respectively coupled to output of said one or more decision modules,

wherein said reconstructing module is adapted to identify one or more signal components having one or more smallest channel coefficients based upon a channel estimate of said plurality of signal components;

wherein said ~~reconstructing module is adapted to reconstruct~~ one or more signal components of said plurality of signal components are reconstructed by a predetermined number of times to provide a reconstructed transformed signal having one or more transformed signal components; and

the one or more signal components are replaced with the reconstructed one or more transformed signal components to thereby form a noise-reduced transformed signal;~~—~~

~~wherein said reconstructing module is adapted to provide a reconstructed transformed signal of said transformed signal;—~~

~~further wherein said reconstructing module is adapted to identify said one or more signal components based upon a channel estimate of said plurality of signal components~~.

Claim 24 (original). The communication system as claimed in claim 23, wherein said one or more decision modules comprises one or more hard decision modules.

Claim 25 (original). The communication system as claimed in claim 23, wherein said one or more decision modules further comprises one or more soft decision modules.

Claim 26 (original). The communication system as claimed in claim 23, wherein said reconstructing module is adapted to perform reconstruction based on a relationship between a received signal component and a transmitted signal.

Claim 27 (original). The communication system as claimed in claim 23, wherein said reconstructing module is adapted to perform simultaneous reconstruction of two or more of said one or more signal components.

Claim 28 (original). The communication system as claimed in claim 23, wherein said reconstructing module is adapted to perform reconstruction of said one or more signal components signal components one at a time.

Claim 29 (currently amended). A signal reconstructing section for a receiver to reduce noise in a transformed signal, said transformed signal having a plurality of signal components on different subcarriers which are orthogonal to each other, said signal reconstructing section comprising:

a detector for detecting said transformed signal;

one or more decision modules, each of said one or more decision modules having an input coupled to output of said detector; and

a reconstructing module having one or more inputs, said one or more inputs being respectively coupled to output of said one or more decision modules,

wherein said reconstructing module is adapted to identify one or more signal components having one or more smallest channel coefficients based upon a channel estimate of said plurality of said components;

wherein said ~~reconstructing module is adapted to reconstruct~~ one or more signal components of said plurality of signal components are reconstructed by a predetermined

number of times to provide a reconstructed transformed signal having one or more transformed signal components; and

the one or more signal components are replaced with the reconstructed one or more transformed signal components to thereby form a noise-reduced transformed signal.~~—~~

~~wherein said reconstructing module is adapted to provide a reconstructed transformed signal of said transformed signal;—~~

~~further wherein said reconstructing module is adapted to identify said one or more signal components based upon a channel estimate of said plurality of signal components~~.

Claim 30 (original). The signal reconstructing section as claimed in claim 29, wherein said one or more decision modules comprises one or more hard decision modules.

Claim 31 (original). The signal reconstructing section as claimed in claim 29, wherein said one or more decision modules further comprises one or more soft decision modules.

Claim 32 (original). The signal reconstructing section as claimed in claim 29, wherein said reconstructing module is adapted to perform reconstruction based on a relationship between a received signal component and a transmitted signal.

Claim 33 (original). The signal reconstructing section as claimed in claim 29, wherein said reconstructing module is adapted to perform simultaneous reconstruction of two or more of said one or more signal components.

Claim 34 (original). The signal reconstructing section as claimed in claim 29, wherein said reconstructing module is adapted to perform reconstruction of said one or more signal components signal components one at a time.